

REMARKS

Claims 8 through 15 and 21 through 24 and new Claim 25 are pending in the application.

Claims 8, 21 and 24 have been amended to reflect that neotame may also be referred to as N-[N-(3,3-dimethylbutyl)-L- α -aspartyl]-L-phenylalanine 1-methyl ester. Support for this amendment can be found in the Application-as-filed on Page 7, third full paragraph.

Claims 8 and 21 have been amended to reflect advantageous inventive sweetener compositions formed from (i) a carbohydrate sweetener consisting essentially of a mixture of HFCS 42 and sucrose; and (ii) a binary high intensity sweetener composition formed from acesulfame K and neotame. Support for this amendment can be found in the Application-as-filed on Page 14, first full paragraph (Example 4).

Claim 8 has also been amended to reflect that the inventive sweetener compositions advantageously impart a taste profile comparable to HFCS 55. Support for this amendment can be found in the Application-as-filed on Page 14, fifth full paragraph.

Claim 10 has been canceled, as its subject matter has been incorporated into Claim 8.

Claims 15 and 21 have been amended to recite "based on the weight of the foodstuff" in lieu of the acronym "bowf." Support for this amendment can be found in the Application-as-filed on Page 8, fifth full paragraph, first sentence.

Claims 22 and 23 have been amended to recite "based on the weight of the sweetener composition" in lieu of the acronym "bowsc." Support for this amendment can be found in the Application-as-filed on Page 6, second full paragraph, first sentence.

Claim 25 has been added to complete the record for examination and highlight advantageous embodiments of the invention.

Claim 25 is directed to advantageous sweetener compositions that include (i) at least one carbohydrate sweetener selected from the group consisting of HFCS 55, HFCS 42 and sucrose; and (ii) an effective amount of a high intensity sweetener composition comprising acesulfame K and N-[N-(3,3-dimethylbutyl)-L- α -aspartyl]-L-phenylalanine 1-methyl ester, in which the acesulfame K is present in an amount of greater than 97 weight % of the total amount of acesulfame K and N-[N-(3,3-dimethylbutyl)-L- α -aspartyl]-L-phenylalanine 1-methyl ester, and the resulting sweetener composition imparts a taste profile comparable to HFCS 55. Support for this amendment can be found in the Application-as-filed on Page 14, first full paragraph (Example 4, including 0.158 g/l acesulfame K and 0.00345 g/l neotame).

Reexamination and reconsideration of this application, withdrawal of all rejections, and formal notification of the allowability of the pending claims are earnestly solicited in light of the remarks which follow.

Submission of Terminal Disclaimer

Claims 8 through 15 and 21 through 24 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting in light of co-pending Application Nos. 10/638,721 and 11/035,590. Solely to advance prosecution of the case and without addressing the merits of the rejection, Applicants respectfully submit herewith a terminal disclaimer, as suggested by the Examiner. More particularly, Applicants submit herewith a terminal disclaimer that disclaims the terminal part of any patent granted on the above-identified application extending beyond the expiration date of the full statutory term which may ultimately result from the cited co-pending applications, i.e. Application Nos. 10/638,721 and 11/035,590. Accordingly, Applicants respectfully request withdrawal of the foregoing rejections.

Rejection Under 35 US § 112

Claims 8 through 15 and 21 through 24 stand rejected over the recitation "neotame." Applicants respectfully submit that all that is required is that the meaning of the terms used in the claims should be apparent from the descriptive portion of the specification. MPEP 608.01(o). Neotame is a term that is widely used in the trade and is readily understood by one skilled in the art to mean N-[N-(3,3-dimethylbutyl)-L- α -aspartyl]-L-phenylalanine 1-methyl ester, as noted in the Application-as-filed on Page 7, 4th paragraph. Irregardless, without further addressing the merits of the rejection and solely to advance prosecution of the above-referenced case, Claims 8, 21 and 24 have been amended to recite "N-[N-(3,3-dimethylbutyl)-L- α -aspartyl]-L-phenylalanine 1-methyl ester" in lieu of "neotame." Accordingly, Applicants respectfully request withdrawal of the foregoing rejection.

Claims 15 and 21 through 24 stand rejected over the terms "bowsc" and "bowf." Without addressing the merits of the rejection and solely to advance prosecution of the above-referenced case, Claims 15 and 21 have been amended to recite "based on the weight of the foodstuff" in lieu of the acronym "bowf." Claims 22 and 23 have likewise been amended to recite "based on the weight of the sweetener composition" in lieu of the acronym "bowsc." As noted above, support for the foregoing amendments can be found in the Application as-filed. Accordingly, Applicants respectfully request withdrawal of the foregoing rejection, as well.

The Claimed Invention is

Patentable in Light of Art of Record

Claims 8 through 15 and 21 through 24 stand rejected over Simon et al. in view of the combination of United States Patent No. 6,294,214 (US 214) to Calderas et al. and United States Patent No. 6,372,297 (US 297) to Ishida et al.

High Fructose Corn Syrups ("HFCSs") are common liquid sweeteners formed from corn syrups in which the naturally occurring glucose in the syrup has been isomerized to fructose by the enzyme iosmerase. HFCSs are typically available as either HFCS 42, containing 42% fructose, or HFCS 55, containing 55 % fructose. The taste profiles of these two HFCSs differ from each other. The taste profiles of both of these HFCSs differ from sugar as well, as correctly noted by the Examiner.

HFCSs are commonly incorporated into a wide variety of foods and beverages instead of sugar, primarily for cost reasons. HFCS 42 is more economical in comparison to HFCS 55. However, amongst HFCSs, it is well accepted that the taste quality of HFCS 55 is superior to HFCS 42. Consequently, HFCS 55 is regarded as a sweetness standard in certain regions and product categories.

Unfortunately, HFCS 55 is highly caloric.

High intensity sweeteners ("HISs") are known for use in low calorie foodstuffs. However, individual HISs and blends of HISs alone have a taste profile which differs significantly from HFCS 55. The high intensity sweeteners and heretofore known blends differ in taste characteristics such as sweetness profile, side taste and off-taste characteristics, for example.

Altogether unexpectedly, Applicants have found that blends including a mixture of sucrose and HFCS 42 carbohydrate sweeteners along with a binary mixture of particular high intensity sweeteners, i.e. components each known individually to have tastes that each differ significantly from HFCS 55, surprisingly provided a sweetness and taste profile comparable to HFCS 55.

The claimed invention thus includes (i) a carbohydrate sweetener mixture consisting essentially of a mixture of HFCS 42 and sucrose, along with (ii) an effective amount of a binary high intensity sweetener composition formed from acesulfame K and neotame, in which the acesulfame K is present in at least a 10 :1 weight ratio in comparison to the neotame and the sweetener composition imparts a taste profile comparable to HFCS 55.

In particularly advantageous embodiments, the acesulfame K is present in up to a 450: 1 ratio in comparison to neotame, as recited in Claim 13.

For example, the acesulfame K may beneficially be present in amounts of greater than 97 weight %, relative to the total amount of acesulfame K and neotame, as reflected in new Claim 25.

None of the cited references teaches or suggests the claimed invention.

Applicant respectfully submits that Simon is directed to reduced calorie soft drinks designed to replace sugar based soft drinks. (Pg. 332, first partial paragraph and fourth full paragraph (noting the amounts needed to make the solution “just as sweet as a 10% sucrose solution”). Simon initially notes that HISs impart “certain and different off-tastes such as bitter and sharp metallic flavours.” (Pg. 331, first full paragraph). Although providing an extensive review of various high intensity sweeteners, Simon does not teach or suggest the use of neotame.

Simon then broadly discloses the concept of a combination of intense sweeteners with a simple sugar. (Pg. 331 and Pg. 332 at Figure 10). Simon goes on to provide a table, Figure 11, disclosing “the most suitable combinations” of a mixture of HISs with a single carbohydrate “with respect to taste quality.” (Page 332).

In Figure 11, Simon (after extensive study) expressly teaches a composition that incorporates acesulfame K into a quaternary HIS blend which further includes saccharin, cyclamate, and aspartame, and that additionally includes HFCS 90 as a sole carbohydrate. (Page 332, Figure 11). Hence Simon, considered as a whole, clearly does not teach or suggest the recited binary HIS mixtures including acesulfame K and neotame. Furthermore, in contrast to the opinion urged within the Office Action, Simon does not teach or suggest a mixture of carbohydrates, much less a mixture of HFCS 42 and sucrose. Simon instead expressly teaches the use of single carbohydrates. Simon's Figure 11 does, however, evidence that individual components within a sweetener mixture have an unpredictable effect upon the resulting taste.

Applicant respectfully submits that Simon, directed to sugar-based soft drink replacements, does not teach or suggest the recited sweetener compositions with a taste profile comparable to HFCS 55. In fact, Simon is altogether silent as to HFCS 55.

Applicant further respectfully submit that Simon, silent as to neotame and teaching HFCS 90 alone along with a quaternary HIS blend, most certainly does not teach or suggest the recited sweeteners formed from (i) a mixture of HFCS 42 and sucrose and (ii) a binary mixture of acesulfame k and neotame.

Thus Simon can not teach or suggest such sweetener compositions in which the acesulfame K is present in up to a 450: 1 ratio in comparison to neotame, as recited in Claim 13.

Nor does Simon teach or suggest advantageous inventive sweetener compositions in which the acesulfame K is present in amounts of greater than 97 weight %, relative to the total amount of acesulfame K and neotame, as recited in new Claim 25.

There further would have been no motivation to have chosen the claimed components or amounts, based on Simon.

Based on the foregoing, Applicant respectfully submits that the claimed invention is patentable in light of Simon, considered either alone or in combination with the remaining art of record.

US 214 likewise fails to teach or suggest the claimed invention.

Applicant respectfully submits that US 214 is directed to improving the microbial stability of non-carbonated beverages. (Col. 1, lines 10 – 12). The “essential elements” of US 214 include a preservative and a polyphosphate. (Col. 3, lines 1 - 28). US 214 merely generically notes that its beverages can contain any of a laundry list of natural or “optional” artificial sweeteners. (Col. 8, lines 22 – 64).

The natural sweetener may be present in amounts of up to 20%. (Col. 8, lines 28 – 31). US 214 is silent as to the recommended amounts of any optional artificial sweeteners, however. The working examples of US 214 indicate the use of HFCS 55 alone, in an amount of about 13 %. (Col. 10, line 63 – Col. 11, line 21).

US 214, directed to antimicrobial stability, does not teach or suggest the recited sweetener compositions.

US 214, merely providing a laundry list of carbohydrate and artificial sweeteners, more specifically does not teach or suggest the recited sweetener compositions formed from (i) a mixture consisting essentially of HFCS 42 and sucrose and (ii) a binary mixture comprising acesulfame K and neotame.

Thus US 214 can not teach or suggest such sweetener compositions in which the acesulfame K is present in up to a 450: 1 ratio in comparison to neotame, as recited in Claim 13.

Nor does US 214 teach or suggest advantageous inventive sweetener compositions in which the acesulfame K is present in amounts of greater than 97 weight %, relative to the total amount of acesulfame K and neotame, as provided in new Claim 25.

There likewise would have been absolutely no motivation to have chosen the claimed components or amounts, based on US 214.

Based on the foregoing, Applicant respectfully submits that the claimed invention is patentable in light of US 214, considered either alone or in combination with the remaining art of record.

US 279 does not cure the deficiencies in the foregoing references.

US 279 is directed to neotame blends having improved dissolution times. (Col. 1, lines 58 – 60). US 279 indicates that acesulfame K may be included in its blends in amounts as low as 10 wt %. (Col. 2, lines 3 – 6). US 279 expressly cautions that the incorporation of excessive amounts of acesulfame K decreases the optimal dissolution rate of neotame. (Col. 3, lines 50 – 52).

US 279 teaches that acesulfame K is known to have a strong “early” taste, a bitter taste, astringent taste and peculiar taste, and is “inferior” to aspartame. (Col. 1, lines 34 – 37). US 279 teaches that neotame also suffers from an “extremely weak” early taste, as well as a strong astringent taste. (Col. 1, lines 18 – 26)

US 279 indicates that its blends are intended to provide the sweetness of sugar, noting that “[s]ucrose is generally regarded as the standard for evaluating the properties or characteristics of the quality of sweetness.” (Col. 1, lines 27 – 30). Curiously, US 279 does not

provide any taste data for its compositions. US 279 instead merely indicates that its compositions provide “a sweetener excellent in quality of sweetness.” (Col. 7, lines 58 – 62). Nevertheless, US 279 further indicates that additional artificial sweeteners may be required to improve the quality of sweetness. (Col. 4, lines 8 – 15). US 279 further generically indicates that low-potency sweeteners may also be included. (Col. 4, lines 17 – 20). US 279 then goes on to indicate that “mixtures,” presumably of any of the laundry list of additive categories within the preceding paragraph, may be included as well. (Col. 4, lines 8 – 19).

US 279, noting sucrose as the sweetness standard, does not teach or suggest the recited sweetener compositions imparting a taste profile comparable to HFCS 55.

US 279, merely providing a laundry list of sweeteners that may be incorporated to improve its mixtures, more specifically does not teach or suggest the recited sweeteners formed from (i) a carbohydrate sweetener consisting essentially of a mixture of HFCS 42 and sucrose and (ii) a binary mixture of acesulfame K and neotame. In fact, US 279 teaches away from the recited binary mixture, based on its teaching of the shortcomings of both acesulfame K and neotame. Applicant further respectfully submits that US 279’s generic reference various diluents and excipients does not teach or suggest the recited mixture consisting essentially of HFCS 42 and sucrose, in contrast to the urgings of the Office Action.

And US 279, requiring less than 97% acesulfame K, can not teach or suggest such sweetener compositions in which the acesulfame K is present in up to a 450: 1 ratio (99.8 wt%) in comparison to neotame, as recited in Claim 13.

Thus US 279 does not teach or suggest advantageous inventive sweetener compositions in which the acesulfame K is present in amounts of greater than 97 weight %, relative to the total amount of acesulfame K and neotame, as provided in new Claim 25. In fact, US 279 strongly teaches away from such advantageous embodiments.

There likewise would simply have been no motivation to have chosen the claimed components or amounts, based on US 279.

Based on the foregoing, Applicant respectfully submits that the claimed invention is also patentable in light of US 279, considered either alone or in combination with the remaining art of record.

There would have been no motivation to have combined these references. Merely because the references can be combined is not enough, there must still be a suggestion. MPEP 2143.01 (section citing Mills).

Simon is broadly directed to reduced-calorie soft drinks, and specifically teaches the combination of cyclamate with HFCS. US 214 addresses the microbial stability of beverages using a combination of preservatives and polyphosphate. US 279 improves the dissolution rate of a particular artificial sweetener. These are altogether different problems solved, to say the least.

However, even if one were to combine the cited references (which Applicant did not), the recited invention would not result.

The combination of references more specifically does not teach or suggest that the recited sweetener compositions formed from (i) a carbohydrate sweetener consisting essentially of a mixture of HFCS 42 and sucrose and (ii) a binary mixture of acesulfame k and neotame would impart a taste profile comparable to HFCS 55.

And the combination can not teach or suggest such sweetener compositions in which the acesulfame K is present in up to a 450: 1 ratio in comparison to neotame, as recited in Claim 13.

Nor does the combination teach or suggest advantageous inventive sweetener compositions in which the acesulfame K is present in amounts of greater than 97 weight %, relative to the total amount of acesulfame K and neotame, as recited in new Claim 25.

There simply would have been no motivation to have chosen the claimed components or amounts based on art of record, considered either alone or in combination.

Based on the foregoing, Applicant respectfully submits that the claimed invention is patentable in light of Simon, US 214 and US 279, considered either alone or in combination.

The Office Action apparently urges that the matching of a given sweetener profile does not involve an inventive step, based on its assertion that it is known to manipulate sweetener blends. Applicant respectfully submits that taste profiles are formed from the compilation of numerous taste components. Applicant respectfully submits that any given sweetener has a specific taste profile, analogous to a taste "fingerprint" formed from a multitude of taste components.

Consequently, in sharp contrast to the opinion urged within the outstanding Office Action, significant inventive work was required to achieve foodstuffs with reduced caloric content but a taste that is comparable to HFCS 55. Hence the recited mixtures are not mere optimization, as further urged within the Office Action.

Applicant further respectfully submits that "obvious to try" is not the standard for patentability. In particular, none of the cited references gives any indication as to which parameters are critical in the provision of a taste profile comparable to HFCS 55 and absolutely no direction as to which of an almost infinite number of combinations is likely to be successful.

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CONCLUSION

It is respectfully submitted that Applicants have made a significant and important contribution to the art, which is neither disclosed nor suggested in the art. It is believed that all of pending Claims 8, 9, 11 through 15 and 21 through 25 are in condition for immediate allowance. It is requested that the Examiner telephone the undersigned if any questions remain to expedite examination of this application.

It is not believed that fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional fees are necessary to allow consideration of this paper, the fees are hereby authorized to be charged to Deposit Account No. 50-2193.

Respectfully submitted,



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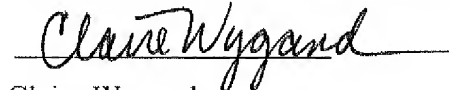
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